CLAIMS

What is claimed:

1. A plate-type cartridge element comprising a planate filter that is composed of two sheets of pleated filter medium being opposed to, and spaced apart from, each other, an upper-end-member being attached on the upper end of the planate filter and having an opening for an air outlet of the planate filter, and a cap being attached on the lower end of the planate filter.

2. The plate-type cartridge element of claim 1 having a transverse pipe in the planate filter.

3. The plate-type cartridge element of claim 1 having a transverse reinforcing material in the planate filter.

4. The plate-type cartridge element of claim 1, wherein the transverse pipe in the planate filter can function as a reinforcement.

5. The plate-type cartridge element of claims 2 – 4, wherein the transverse pipe in the planate filter can be set to be transverse between the right and left sides of the planate filter.

6. The plate-type cartridge element of claims 1 – 5, wherein the transverse pipe or the reinforcing material in the planate filter can disperse the air so as to disperse the dust during a backwash of the planate filter.

7. The plate-type cartridge element of claims 1 – 6, wherein the transverse pipe or the reinforcing material in the planate filter can be located in the filter and wherein there are two vertical rods to support both sides of it, so that they are shaped like an H.

8. The plate-type cartridge element of claims 1 – 7, wherein the transverse pipe or the reinforcing material in the planate filter is welded to the vertical rods.

9. The plate-type cartridge element of claims 1 – 8, wherein the upper-end-member and the cap are made of resin.

10. A plate-type cartridge element that is used for a bag filter, wherein the element comprises a planate filter that is composed of two sheets of pleated filter medium being opposed to, and spaced apart from, each other, a reinforcing material that is used by being insertable into the planate filter and removable from it, an upper-end-member attached on the upper end of the planate filter and having an opening for air to exit from the planate filter, and a cap attached on the lower end of the planate filter.

11. The plate-type cartridge element of claim 10, wherein the reinforcing material that is used by being inserted into the planate filter is equipped with a transverse member.

12. The plate-type cartridge element of claim 11, wherein the transverse pipe fixed on the reinforcing material that is used by being inserted into the planate filter is set transversely between the right and left sides of the planate filter.

13. The plate-type cartridge element of claims 10 – 12, wherein the transverse pipe fixed on the reinforcing material that is used by being inserted into the planate filter can disperse the air so as to disperse the dust on the planate filter during backwash of it.

14. The plate-type cartridge element of claims 10 – 13, wherein the reinforcing material that is used by being inserted into the planate filter can be a welded structure and made of material having the same stiffness as iron or the like.

15. The plate-type cartridge element of claims 10 – 14, wherein the reinforcing material is a welded structure.

16. The plate-type cartridge element of claims 10 – 15, wherein the upper-end-member and the cap are made of resin.

17. A mechanism to attach and detach a plate-type cartridge element of a dust collector comprising guiding members that are fixed under the bottom of a duct at intervals and have inclined elliptic holes, rails that are fixed in the guiding members and have connecting holes corresponding to the inclined elliptic holes, coupling devices

that couple the guiding members with the rails by penetrating the inclined elliptic holes and the connecting holes, and cartridge elements that are installed between and supported by the rails.

18. A mechanism to attach and detach a plate-type cartridge element of a dust collector comprising guiding members that are fixed under the bottom of a duct at intervals and have inclined elliptic holes, rails that are fixed in the guiding members and have connecting holes corresponding to the inclined elliptic holes, coupling devices that couple the guiding members with the rails by being inserted through the inclined elliptic holes and the connecting holes, a sliding member that has holes in which the cartridge elements are inserted and that is installed on the rails, and cartridge elements that are inserted in the holes of the sliding member, installed between the rails with the sliding member, and supported by the rails.

19. The mechanism to attach and detach a plate-type cartridge element of a dust collector of claim 17 or 18, wherein the cartridge elements are plate-type cartridge elements.

20. A dust collector having plate-type cartridge elements, each comprising a filter that is composed of two sheets of pleated filter medium being opposed to, and spaced apart from, each other, wherein one end of the filter is closed and the other end of it is open, wherein the cartridge elements are installed in the dust collector so that the successive edges shaped like ridges of the pleated filter medium appear to be vertical stripes, wherein the dust collector comprises filtering chambers that are stacked and that communicate with each other, ducts that are fixed on the upper part of each of the filtering chambers at intervals and communicate with the inside of the filters through the openings of the filters, the plate-type cartridge elements that are installed in the filtering chambers and are attached on the ducts being easily attached and detached, purified-air chambers that communicate with the ducts, an air-suctioning means that communicates with the purified-air chambers, and a pulse-jet mechanism that intermittently feeds compressed air inside the filters through nozzles that face the openings of the ducts.

21. The dust collector of claim 20, wherein a transverse member is installed in the filter and the transverse member disperses the air to disperse the dust on the planate filter while it is being backwashed.

22. A dust collector having plate-type cartridge elements, each of which comprises a filter that is composed of two sheets of pleated filter medium being opposed to, and spaced apart from, each other, wherein one end of the filter is closed and the other end of it is open, wherein the cartridge elements are installed in the dust collector so that the successive edges shaped like ridges of the pleated filter medium appear to be vertical stripes, wherein the dust collector comprises filtering chambers that are stacked and that communicate with each other, ducts that are fixed on the upper part of each of the filtering chambers at intervals and that communicate with the inside of the filters through the openings of the filters, plate-type cartridge elements that are installed in the filtering chambers and that are attached on the bottom of the ducts and can easily be attached and detached, purified-air chambers that communicate with the ducts, an air-suctioning means that communicates with the purified-air chambers, a pulse-jet mechanism that intermittently feeds compressed air inside the filters through nozzles that face the openings of the ducts, an entrance of air with dust that is located on the top of the duct and communicates with the highest filtering chamber, and a hopper that communicates with the bottom of the lowest filtering chamber.

23. A pulse-jet-type dust collector having a cartridge element that is comprised of a filter that has a cylindrical shape, one end of the filter being closed and the other end of it having an opening, wherein the dust collector comprises a hollow duct, one end of which is closed and the other end of which is open, the cartridge element that is attached on the duct being able to be easily attached and detached, wherein the inside of the filter communicates with the duct through the opening of the filter, and a pulse-jet mechanism that intermittently feeds compressed air inside the filter through nozzles and the duct.

24. The pulse-jet-type dust collector of claim 23, wherein the cartridge element is a plate-type cartridge element.